Is Routinely Checking Gastric Residual Volume an outdated practice in the ICU Setting?

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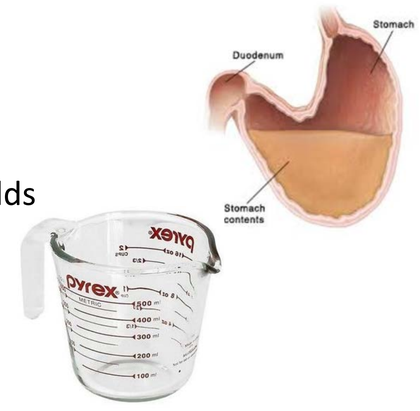
Gastric Residuals and Enteral Feeding

Studies have demonstrated that for patients who receive enteral support, only 50% of their nutrient goals are met, due in large part, to the practice of holding feedings for gastric residuals.[1] Gastric residual volume (GRV) traditionally has been used as a tool to assess enteral feeding tolerance though this remains controversial.[1] Aspiration of gastric contents is a risk factor for developing pneumonia. Withholding enteral feeding due to high GRV has been employed to help avoid this complication despite the lack of agreement on GRV thresholds and lack of evidence supporting association of high GRV and pneumonia. To maximize the provision of calories and protein, the 2016 ASPEN/ SCCM Critical Care Guidelines recommend not checking GRV. However if the decision is made to check GRV, feedings should not be held for residuals under 500 ml.

Current Practice for Patients Enterally Fed

Current practice at Harborview Medical Center:

- Maintain head of bed at or above 30 degrees
- Verify feeding tube placement by KUB
- Check and record GRV every 4 hours
- If GRV is over 500 ml, nursing staff discards contents, holds enteral feeding for 2 hours, and rechecks GRV
- If GRV is than less than 500 ml, residual content is reinfused, and feeding resumed at the previous rate
- Prokinetic as needed



Methods

Conducted a literature review of prospective trials examining outcomes of checking GRVs at different thresholds or checking versus not checking as well as evidence contributing to current clinical practice guidelines from the last five years.

References

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Findings

- Common threshold values for GRV and holding EN are below the physiologically normal range given gastric secretions and gastric emptying[2].
- No evidence to support GRV is associated with aspiration or ventilator-associated pneumonia (VAP)[3].
- Not monitoring GRV results in more EN delivered without increased VAP[4] (see image below).
- No standardized methods for checking GRVs and checking GRVs may clog FT[5].

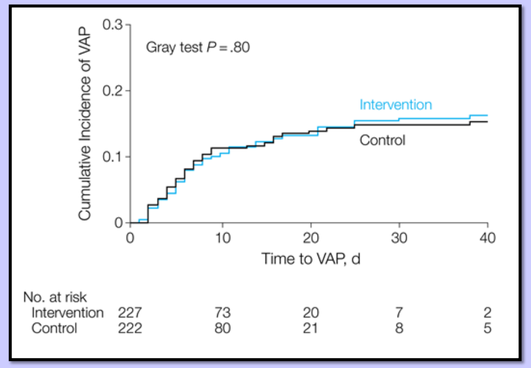

Figure Legend: Cumulative Incidence of VAP in intervention (no GRV monitoring) vs the control groups. Adapted from JAMA 2013; 309(3): 249-256

Implications

Evidence demonstrates that routinely checking GRV in ICU patients increases risk of harm through decreasing nutrient provision for no demonstrated benefit.

Proposed Implementation

- Do not routinely check gastric residuals.
- Monitor EN tolerance by abdominal exam (e.g., distention, pain)
- If GI dysfunction suspected, may consider:
  - administration of prokinetic
  - obtaining post-pyloric enteral access
- Hold feeds for emesis and for regurgitation.

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